Delays and Unmet Need for Health Care Among Adult Primary Care Patients in a Restructured Urban Public Health System

Allison L. Diamant, MD, MSHS, Ron D. Hays, PhD, Leo S. Morales, MD, PhD, Wesley Ford, MPH, Daphne Calmes, MD, MPH, Steven Asch, MD, MPH, Naihua Duan, PhD, Eve Fielder, DrPH, Sehyun Kim, PhD, Jonathan Fielding, MD, MPH, Gerald Sumner, PhD, Martin F. Shapiro, MD, PhD, David Hayes-Bautista, PhD, Lillian Gelberg, MD, MSPH

Objectives. We estimated the prevalence and determinants of delayed and unmet needs for medical care among patients in a restructured public health system.

Methods. We conducted a stratified cross-sectional probability sample of primary care patients in the Los Angeles County Department of Health Services. Face-to-face interviews were conducted with 1819 adult patients in 6 languages. The response rate was 80%. The study sample was racially/ethnically diverse.

Results. Thirty-three percent reported delaying needed medical care during the preceding 12 months; 25% reported an unmet need for care because of competing priorities; and 46% had either delayed or gone without care.

Conclusions. Barriers to needed health care continue to exist among patients receiving care through a large safety net system. Competing priorities for basic necessities and lack of insurance contribute importantly to unmet health care needs. (*Am J Public Health.* 2004;94:783–789)

The Institute of Medicine's Committee on Monitoring Access to Personal Health Care Services defines appropriate access to health care as "the timely use of personal health services to achieve the best possible health outcome."[1(p4)] Previous studies have found that uninsured adults are more likely to delay seeking care than those who are insured,[2–4] less likely to receive preventive and screening services,[5] and less likely to be referred by primary care physicians for other health services.[6] Delayed or nonreceipt of medical care may result in more serious illness for the patient, increased complications, a worse prognosis, and longer hospital stays.[4,5,7–9]

Financial problems are only 1 of the barriers people face in obtaining the health care they need.[10] Studies support the models of health care utilization that suggest that other factors also enable or impede an individual's ability to obtain medical care.[11,12] These include health beliefs, cultural practices, language barriers, social networks and contacts, and the availability and accessibility of medical care in the community.[11,12] Thus, uninsured populations composed of ethnically diverse individuals pose challenges in terms of providing/receiving needed care in a timely fashion. In many urban areas, the population is ethnically diverse with a large population of uninsured adults and children. The provision of needed medical care to low-income people residing in large urban areas continues to be a challenge.[13]

For publicly funded health care systems to provide equitable access to needed health care, information about the delays patients experience in receiving care and their unmet needs for medical care is critical. The Los Angeles County Department of Health Services (LAC-DHS) serves a crucial role in the provision of health care to many adults and children in Los Angeles County, servicing more than 600 000 patients per year. Los Angeles County is remarkable for the racial/ethnic diversity of the population and for the proportion of uninsured individuals who reside there—almost 2 million in 2002.[14] In 1995, LAC-DHS faced serious financial problems that prompted restructuring of the provision of hospital-based and ambulatory care services. One major reorganizing strategy was the improvement of ambulatory care through greater emphasis on primary care services. This was implemented through the formation of partnerships between LAC-DHS and existing community clinics that served as part of the safety net.

As a result of the restructuring, LAC-DHS comprised 4 types of facilities providing primary care services: comprehensive health centers, personal health centers, hospital outpatient clinics, and public/private partnership clinics. This restructuring of the ambulatory care system provided an important opportunity to assess access to health care for patients in the primary care network.

We studied patients receiving primary medical care services in this system to gain a better understanding of why patients delay care or have unmet health care needs. The aims of this article are to (1) estimate the prevalence of delayed and unmet health care needs among adult patients of the LAC-DHS within the preceding 12 months, (2) identify their perceived barriers for delayed care, and (3) identify factors that put these patients at increased risk for having delayed care and unmet health care needs.

METHODS

Study Design

We employed a cross-sectional study utilizing probability sampling and survey methods to conduct this study. Although full details of the study design and sampling method have been described elsewhere,[15] we provide a short overview. Our target population was patients receiving medical care at primary care clinics in the LAC-DHS primary care network. Patients were sampled from among each of the 8 geographic areas within Los Angeles County known as service planning areas.

Sampling

The goal was to complete approximately 2400 patient interviews. The sample was selected probabilistically in 3 stages: clinic facility, session within facility, and patient within session. By recruiting patients at clinics, we ensured that all patients receiving services from LAC-DHS primary care clinics were represented.

For the first stage, the LAC-DHS facilities were categorized into 4 distinct strata: 6 comprehensive health centers, 5 hospital outpatient centers, 19 personal health centers, and 85 public/private partnership program sites. One fourth of the patient sample was allocated to each stratum, an allocation designed to achieve 80% power (α=.01) for detecting a small difference (0.2 of a standard deviation) between strata. We included all clinics designated as providing primary care services, specifically: general internal medicine, general pediatrics, family medicine, and urgent care/walk-in. These clinics served as the intake points for the recruitment of patients. For comprehensive health centers, personal health centers, and hospital outpatient centers, we sampled all facilities with certainty. For public/private partnership program clinics, we sampled 20 facilities with probabilities proportional to estimated size; to ensure representation from all geographic areas of the county, the design specified at least 1 public/private partnership program facility from each service planning area.

In the second stage, we randomly sampled eligible sessions from the selected facilities. Each session was a combination of a facility and a time slot—the time slots were the combinations of week (1 through 16 for our 16-week study period), day of the week (Monday through Sunday), and time of the day (morning, afternoon, evening). Altogether, we sampled 327 sessions.

In the third stage, we employed systematic random sampling to select eligible patients from the sampled sessions. For this sampling, intervals were calculated from estimated caseloads for each facility and session.

Eligibility

Patients were eligible to participate in the survey if they were aged at least 1 year, had received health care through the LAC-DHS system within 12 months preceding the date of the interview, and were at the clinic for a medical visit (i.e., to be seen by a health care provider, not just for medication pickup). When the selected patient was a minor younger than 18 years, the child's parent or legal guardian acted as the proxy respondent for the child's interview. Patients were not eligible to participate if they did not speak 1 of the 6 languages included in the study (English, Spanish, Armenian, Chinese, Korean, or Tagalog) or were not able to participate (e.g., cognitive impairment).

Data Collection

Data collection relied on face-to-face interviews and was performed over 16 weeks from mid-February to mid-June 1999. The interview was administered in 2 parts by trained bilingual interviewers in the waiting rooms or offices of the clinics and took approximately 40 minutes to complete. The main interview was completed before the patient saw the physician, and the postvisit interview was conducted after the patient had completed the medical visit. As part of the informed consent process, patients were offered $10 for their participation.

Response Rate

Of the 5331 patients enumerated, 3193 (60%) were found to be eligible. Ineligible patients included those with no prior county visits, children younger than 1 year, people at the clinic for other reasons, those who did not speak 1 of the study languages, patients interviewed previously, and minor children without a parent or guardian present. Among the eligible patients, 2564 completed the main interview and were included in the final sample—our response rate was therefore 80%; 15% refused to participate, and 4% terminated the interview before completion. About half each completed the survey in Spanish (52%) or English (47%) and less than 2% completed the survey in the other languages. Of the 2564 respondents, 745 represented pediatric patients. The analyses reported here are based on the 1819 adults who participated in the survey.

Weighting for Sampling, Visit Frequency, and Nonresponse

The combined analysis weight was derived as the product of the overall sampling weight (the product of the facility-level sampling weight, the session-level sampling weight, and the individual-level sampling weight), the nonresponse weight, and the visit frequency weight.[15]

Survey Instrument

The instrument was developed from previously administered English- and Spanish-language survey items.[16–22]

Outcome Variables

The 2 main outcomes were delayed and unmet need for medical care within the past year. Delayed care was measured by the following: "In the past 12 months, have you ever put off going to the doctor for medical care because . . . You couldn't get off work? You were too sick? You didn't have a way to get there? You had responsibilities to take care of someone? You were afraid to leave home because of personal safety? You had other more important things to take care of?" Unmet need for health care because of competing priorities was measured by the following: "In the last 12 months, have you ever had to go without health care at a county clinic because you had to spend your money for food, clothing, housing, etc.?"

Independent Variables

The 11 independent variables included age, gender, race/ethnicity, income, education, immigration status, coverage for health care, 1 or more children younger than 18 years at home, 1 or more other adults aged 65 years and older at home, 3 or more visits for health care during the preceding year, and perceived health status. Patients were categorized as Hispanic/Latino, non-Hispanic/Latino Black, non-Hispanic/Latino White, Asian/Pacific Islander, and Other based on self-identification. Income categories were constructed to reflect the skew of the patients toward very low annual incomes (<$5000, $5001 to $10 000, $10 001 to $15 000, and >$15 000). Education is presented as a dichotomous variable to reflect graduation from high school. Patients were categorized as immigrants if they reported a country other than the United States as their place of birth. Coverage for health care was a 4-level variable: Medicaid, private insurance, other cov-

erage (including publicly funded nontransferable programs), and no coverage. Health status was measured with a widely used single item with 5 response options: excellent, very good, good, fair, or poor.

Statistical Analyses

We calculated the overall rate of delayed care (i.e., patients who responded yes to 1 or more of the 6 reasons described previously) and the specific rates for the reasons that patients delayed care. In addition, we calculated the rate for unmet need for health care due to competing priorities. We estimated the bivariate associations between delayed care and unmet need for health care and patient characteristics—gender, age, race/ethnicity, income, education, immigration status, coverage for health care, 1 or more children younger than 18 years at home, 1 or more adults aged 65 years and older at home, and health status. To estimate the unique associations between patient characteristics and delayed and unmet health care needs, we performed multivariate logistic regression analyses. All variables included in the bivariate analyses were included in the multivariate model. We assessed our explanatory variables for the presence of significant multicollinearity and found none. All analyses were performed using SAS, version 8,[23] and Stata.[24]

RESULTS

The mean age of the sample was 44 years. Hispanics/Latinos constituted the largest racial/ethnic group (56%). Women made up over two thirds of the sample. The median household income was within the income category of $5001 to $10 000 (Table 1). Fifty-five percent of adults had not graduated from high school, 62% of participants were born outside the United States, 82% were not employed full time, and 69% were uninsured for health care. The median health status was fair.

Delayed Care

Thirty-three percent of patients reported that they had delayed seeking medical care at least once during the preceding 12 months, for the following reasons (multiple reasons allowed): 13% could not take time off from work, 12% had to care for someone else, 12% did not have transportation to get to their appointment, 9% were too sick, 6% had other or more important things to do, and 3% were afraid for their personal safety. We found significantly higher rates for delayed care among females, US-born individuals, employed patients, and those with poor health status. There was no significant difference in rates of delayed care for people who had made or had not made 3 or more visits to a physician during the preceding year (Table 2). Women were more likely than men to attribute their delayed health care to being too sick (10% vs 6%, $P<.05$) and having responsibilities for taking care of other individuals (14% vs 8%, $P<.01$). Non–US-born patients were less likely than US-born patients to report being too sick (7% vs 11%, $P<.01$) or having problems with transportation (10% vs 14%, $P<.05$) as reasons for delaying medical care. Patients employed full time had the highest rate for delaying care because of not being able to take time off work, and this rate was significantly different from that of patients who were not employed (27.1% vs 5.7%, $P<.001$). Furthermore, patients who were unemployed were more likely than patients who were employed full time to report delaying care because of problems with transportation (13.8% vs 7.1%, $P<.05$).

In multivariate analyses, we found that only gender was independently associated with delaying health care (Table 3). Women were more likely to report having delayed seeking care when we controlled for age, race/ethnicity, income, immigration status, education, employment, coverage for health care, children living in the household, persons aged 65 years or more living in the household, and health status.

Unmet Need

Twenty-five percent of patients indicated that they had gone without needed medical care because they had to spend their money for food, shelter, or clothing. In bivariate analyses, females, immigrants, and uninsured patients had higher rates of unmet need for health care (Table 2). In addition, patients who reported poor health status had higher rates of unmet need for health care than did patients reporting better health status. Patients with persons aged 65 years and older

TABLE 1—Sample Characteristics of Adult Patients (n = 1819) in Los Angeles County Department of Health Services Clinics: 1999

	%
Age, y (mean = 44)	
18–25	11
26–40	33
41–64	51
≥65	5
Gender	
Male	31
Female	69
Race/ethnicity	
Hispanic/Latino	56
Black	23
White	17
Asian/Pacific Islander	2
Other	2
Income, $	
≤5000	38
5001–10 000	22
10 001–15 000	19
>15 000	21
Education	
High school graduate	45
Not high school graduate	55
Immigration status	
US-born	38
Non–US-born	62
Employment status	
Employed full time	19
Employed part time	21
Not employed	61
Coverage for health care	
Medicaid	14
Private insurance	5
Other coverage	12
None	69
Children in household	
≥1 children <18 y	56
No children <18 y	44
Elderly in household	
≥1 adults ≥65 y	15
No adults ≥65 y	85
Health status	
Poor	9
Fair	41
Good	30
Very good	15
Excellent	6

TABLE 2—Bivariate Analyses for Delayed Care and Unmet Need for Health Care Among Adult Patients (n = 1819) in Los Angeles County Department of Health Services Primary Care Clinics: 1999

	Delayed Medical Care for at Least 1 of 6 Reasons, %	Had Unmet Need for Medical Care: Money Spent for Food, Housing, Clothing,
Age, y		
18–25	32.4	22.7
26–40	34.1	26.8
41–64	34.4	26.2
≥65	19.9 NS	10.0**
Gender		
Male	27.4***	20.8**
Female	36.1	27.2
Race/ethnicity		
Hispanic/Latino	31.4	29.0
Black	34.2	21.7
White	38.9	19.4
Asian/Pacific Islander	18.8	42.2
Other	22.1 NS	24.7 NS
Income, $		
≤5000	34.0	26.0
5001–10 000	35.5	26.7
10 001–15 000	36.9	30.5
>15 000	30.1 NS	20.2 NS
Education		
High school graduate	31.1	27.5
Not high school graduate	36.1 NS	22.3 NS
Immigration status		
US-born	37.8	19.5
Non–US-born	30.6**	28.5***
Employment status		
Employed full time	38.5	25.9
Employed part time	37.9	25.2
Not employed	30.1**	24.8 NS
Coverage for health care		
Medicaid	28.8	11.8
Private insurance	39.0	7.2
Other coverage	32.6	19.5
None	34.8 NS	29.2†
Children in household		
≥1 children <18 y	31.8	26.1
No children <18y	35.5 NS	24.0 NS
Elderly in household		
≥1 adults ≥65 y	31.1	15.8
No adults ≥65 y	33.3 NS	26.1***
3 or more physician visits		
Yes	34.1	24.7
No	32.8 NS	25.5 NS
Health status		
Poor	45.7*	41.6†
Fair	34.1	28.5
Good	29.6	21.6
Very good	30.1	16.7
Excellent	38.7	17.9

Note. NS = not significant.
*P < .1, **P < .05, ***P < .01, †P < .001.

living at home had lower rates of unmet need for health care.

After adjustment for sociodemographic and other patient characteristics in multivariate analyses, uninsured patients were more likely than individuals with any type of coverage for medical care to have unmet needs for health care due to competing priorities—having to pay for food, shelter, or clothing (Table 4). Patients in poor health were at increased risk, whereas individuals who had an elderly relative living with them were at reduced risk for unmet health care needs.

Overall, 46% had either delayed care or had an unmet need for health care, and almost 13% of patients had both delayed care and had an unmet need for health care within the past 12 months.

DISCUSSION

This study demonstrates the existence of significant delays and unmet health care needs among low-income and uninsured patients who have taken some advantage of a comprehensive public health system that serves as a safety net for patients with no place else to obtain needed health care. However, even among this sample, taken from those who have used the safety net system at least once over a 12-month period, a substantial portion reported that they had delayed receiving needed medical care during that time. Because of delays and competing priorities, these patients are at increased risk for limited receipt of necessary health care.

One quarter of the patients in this study had not received needed medical care during the preceding year because the money they had was needed to pay for food, shelter, or clothing. Patients uninsured for health care and those reporting the worst health status were the most likely to have delayed needed medical care due to competing priorities. In the National Health Interview Survey, health insurance status was related to every access-to-care indicator.[25] People without health insurance were the most likely to have an unmet need for health care and to lack a usual source of care. Other research has shown that the lack of health insurance acts as a major barrier to receipt of needed health care services.[4,5,8,26–29]

TABLE 3—Determinants (Multivariate) of Delayed Care Among Adult Patients (n = 1454) in Los Angeles County Department of Health Services Primary Care Clinics: 1999

	Delayed Care	
	Relative Risk[a]	95% CI
Age, y		
18–25	0.92	0.60, 1.33
26–40	0.99	0.78, 1.23
41–64	. . .	. . .
≥65	0.77	0.43, 1.21
Gender		
Male	. . .	. . .
Female	1.40	1.16, 1.65*
Race/ethnicity		
White	1.08	0.80, 1.39
Black	1.12	0.77, 1.52
Hispanic/Latino	. . .	. . .
Asian/Pacific Islander	0.64	0.24, 1.38
Other	0.73	0.30, 1.45
Income,$		
≤5000	. . .	. . .
5001–10 000	0.96	0.76, 1.19
10 001–15 000	1.09	0.81, 1.40
>15 000	0.88	0.68, 1.10
Immigration status		
Immigrant	0.90	0.66, 1.18
Not immigrant	. . .	. . .
Education		
High school graduate	. . .	. . .
Not high school graduate	0.91	0.72, 1.12
Employment status		
Employed full time	1.24	0.98, 1.53
Employed part time	1.12	0.85, 1.41
Not employed	. . .	. . .
Coverage for health care		
Medicaid	0.85	0.60, 1.15
Private insurance	1.24	0.80, 1.74
Other coverage	0.88	0.66, 1.13
None	. . .	. . .
Children in household		
No children <18 y	. . .	. . .
≥1 children <18 y	0.86	0.69, 1.05
Elderly in household		
No adults ≥65 y	. . .	. . .
≥1 other adults ≥65 y	0.97	0.71, 1.28
Health status		
Poor	1.17	0.85, 1.53
Fair/good	. . .	. . .
Very good	0.87	0.62, 1.16
Excellent	1.22	0.81, 1.69

Note. CI = confidence interval; . . . = reference group.
[a] Multivariate logistic regression model to examine joint effects for age, race/ethnicity, income, immigration status, education, employment, coverage for health care, children living in the household, elderly persons living in the household, and health status.
*$P < .001$.

Thirty three percent of patients reported 1 or more reasons for delaying their health care during the preceding year, although we do not know the length of the delays. However, because these findings are among patients who had received medical care at least once during the preceding year, they may actually underestimate the extent of the problem of the entire group of people who delayed care because of perceived barriers or competing priorities. The finding that women were at elevated risk for delaying needed medical care supports results from prior studies.[30–33] Women in this study were more likely than men to report that taking care of others had caused them to delay seeking health care for themselves. Although women are the main users of the medical system, they are most often responsible for providing care to family members and friends.[30,34] Thus, programs to encourage women to obtain needed medical care might have increased effectiveness if child care or elder care services had been provided on site at the health care facilities; if care for multiple family members had been coordinated; or if temporary caregivers had been identified.

Income was not significantly associated with delayed and unmet needs for health care. The lack of significant findings may be due to a "floor effect" as the population sampled and served by the LAC-DHS is by definition a low-income population. However, the impact of finances on delayed and unmet needs for medical care in the general population has been well documented.[10,35] Medical care through the LAC-DHS is not necessarily free but based on ability to pay. For those without resources it is free. Indeed, it is an indication of the pervasiveness of financial barriers to medical care that individuals at different income levels may experience varying tradeoffs with respect to health care and competing priorities.

Although many patients reported reasons for delayed care that can only be resolved by reducing socioeconomic inequalities, other causes for delayed or unmet health care needs may be addressed by changing how LAC-DHS delivers care. Additional restructuring might include the expansion of clinic hours, the implementation of appointment reminder systems at all county clinics, trans-

TABLE 4—Determinants (Multivariate) of Unmet Need for Health Care Among Adult Patients (n = 1455) in Los Angeles County Department of Health Services Primary Care Clinics: 1999

	Unmet Need for Care[a]	
	Relative Risk[b]	95% CI
Age, y		
18–25	1.02	0.60, 1.59
26–40	1.06	0.80, 1.37
41–64	. . .	. . .
≥65	0.91	0.42, 1.68
Gender		
Male	. . .	. . .
Female	1.22	0.91, 1.58
Race/ethnicity		
Hispanic/Latino	. . .	. . .
Black	0.83	0.48, 1.31
White	0.86	0.60, 1.18
Asian/Pacific Islander	1.27	0.48, 2.44
Other	0.69	0.26, 1.52
Income, $		
≤5000	. . .	. . .
5001–10 000	1.10	0.76, 1.52
10 001–15 000	1.09	0.74, 1.52
>15 000	0.75	0.51, 1.06
Immigration status		
Immigrant	1.02	0.70, 1.44
Not immigrant	. . .	. . .
Education		
High school graduate	. . .	. . .
Not high school graduate	1.26	0.98, 1.58
Employment status		
Employed full time	1.17	0.80, 1.61
Employed part time	1.04	0.75, 1.39
Not employed	. . .	. . .
Coverage for health care		
Medicaid	0.40	0.26, 0.61**
Private insurance	0.30	0.11, 0.76*
Other coverage	0.62	0.44, 0.86*
None	. . .	. . .
Children in household		
≥1 children <18 y	1.01	0.74, 1.34
No children <18 y	. . .	. . .
Elderly in household		
≥1 other adults ≥65 y	0.55	0.34, 0.86*
No adults ≥65 y	. . .	. . .
Health status		
Poor	1.72	1.31, 2.17*
Fair/good	. . .	. . .
Very good	0.82	0.54, 1.20
Excellent	0.66	0.34, 1.19

Note. CI = confidence interval; . . . = reference group.
[a]Unmet need for health care = money spent on housing, clothing, or food rather than medical care.
[b]Multivariate logistic regression model to examine joint effects for age, race/ethnicity, income, immigration status, education, employment, coverage for health care, children living in the household, elderly persons living in the household, and health status.
*P < .01, **P < .001

portation to, from, and between county facilities, and the availability of comprehensive family care at a single location.

These findings represent an important critical analysis in the development of a system for ongoing data collection and evaluation to improve the public health care programs. Important findings with regard to barriers and use of care have been identified that will be used to improve patients' access to care. A major strength of this study is that the sample is representative of primary care users within the LAC-DHS primary care network. In addition, face-to-face interviews were performed in multiple languages and included people for whom completion of a written survey would not have been possible because of low literacy rates. Face-to-face interviews also contributed to the high response rate (80%).

However, there are several limitations to this study. First, because the sampling design included only patients already receiving care through the LAC-DHS, it is not possible to assess delayed or unmet health care needs among people not currently visiting the medical facilities. Some of these people may be at greater risk for not receiving necessary medical care, even though they probably are not representative of all low-income uninsured individuals. Second, as with most survey-based research, the patients may have under- or overestimated the services they received. Errors of this type can lead to biased results in comparisons with other samples.

In conclusion, this study should be considered the beginning of a critical analysis process that will allow urban public health care systems to assess the components of patient care, including the critical areas of access and barriers to care and unmet needs for health care. Clearly, barriers exist for a substantial portion of patients who have received medical care in a large public health system. Patients without any form of coverage for health care and those in the poorest health are at the greatest risk of having unmet needs for medical care due to competing priorities associated with activities of daily living. New programs need to be implemented that will have a positive impact on the number of providers within the urban public health care system, as well as an expansion in primary care services. Improved efficiencies in the provision of

health care is one answer to the growing population of low-income and uninsured individuals who rely on publicly funded systems of care. Another answer is the expansion of insurance programs that would allow people to seek care away from the safety net. ■

About the Authors

Allison L. Diamant, Ron D. Hays, Leo S. Morales, Martin F. Shapiro, and David Hayes-Bautista are with the UCLA Division of General Internal Medicine and Health Services Research, Los Angeles, Calif. Allison L. Diamant is also with the UCLA National Center of Excellence in Women's Health, Los Angeles. Ron D. Hays, Leo S. Morales, and Martin F. Shapiro are also with RAND Health, Santa Monica, Calif, as are Steven Asch and Naihua Duan. Steven Asch is also with the West Los Angeles Veteran's Administration. Jonathan Fielding is with the Los Angeles County Department of Health Services. Daphne Calmes is with the Charles R. Drew University Department of Pediatrics, Los Angeles. Eve Fielder and Gerald Sumner are with the UCLA Institute for Social Sciences Research, Los Angeles. Sehyun Kim is with Pochon CHA University, Department of Preventive Medicine, Pochon, Korea. Lillian Gelberg is with the UCLA Department of Family Medicine, Los Angeles.

Requests for reprints should be sent to Allison L. Diamant, MD, MSHS, Assistant Professor, UCLA, Division of General Internal Medicine and Health Services Research, 911 Broxton Ave, Los Angeles, CA 90095–1736 (e-mail: adiamant@mednet.ucla.edu).

This article was accepted January 1, 2003.

Contributors

All authors were involved in the initial project development including study design, development of the questionnaires, data analysis, and the writing of the article. A. Diamant was responsible for the implementation and oversight of data collection, the initial draft of the article, and coordination of subsequent revisions. J. Fielding was involved in data analysis and the writing of the article. N. Duan was responsible for developing the sampling frame, statistical analysis and the writing of the article. S. Kim assisted with programming, statistical analysis, and the writing of the article.

Acknowledgments

The 1999 Los Angeles County Department of Health Services/UCLA Patient Assessment Survey was funded by the Los Angeles County Department of Health Services.

We thank staff at the Los Angeles County Department of Health Services for their assistance with this project. Administrative support for this work was provided by the UCLA Division of General Internal Medicine and Health Services Research, with special thanks to Sonja Paden for her work preparing the manuscript.

Note. This work does not necessarily represent the opinions of the funding organizations or of the institutions with which the authors are affiliated.

Human Participant Protection

Institutional review board approval was received from the authors' home institutions and from all participating facilities as required.

References

1. Committee on Monitoring Access to Personal Health Care Services; Millman M, ed. *Access To Health Care In America.* Washington DC: National Academy Press; 1993.

2. Ayanian JZ, Kohler BA, Abe T, Epstein AM. The relation between health insurance coverage and clinical outcomes among women with breast cancer. *N Engl J Med.* 1993;329:326–331.

3. Ayanian JZ, Weissman JS, Schneider EC, Ginsburg JA, Zaslavsky AM. Unmet health needs of uninsured adults in the United States. *JAMA.* 2000;284: 2061–2069.

4. Institute of Medicine, Committee on the Consequences of Uninsurance, Board on Health Care Services. *Coverage Matters: Insurance and Health Care.* Washington, DC: National Academy Press; 2001.

5. Institute of Medicine, Committee on the Consequences of Uninsurance, Board on Health Care Services. *Care Without Coverage: Too Little, Too Late.* Washington, DC: National Academy Press; 2002.

6. Mort EA, Edwards JN, Emmons DW, Convery K, Blumenthal D. Physician response to patient insurance status in ambulatory care clinical decision-making. Implications for quality of care. *Med Care.* 1996;34: 783–797.

7. Epstein AM, Stern RS, Weissman JS. Do the poor cost more? A multihospital study of patients' socioeconomic status and use of hospital resources. *N Engl J Med.* 1990;322:1122–1128.

8. Adler NE, Boyce WT, Chesney MA, Folkman S, Syme SL. Socioeconomic inequalities in health. No easy solution. *JAMA.* 1993;269:3140–3145.

9. Weissman JS, Gatsonis C, Epstein AM. Rates of avoidable hospitalization by insurance status in Massachusetts and Maryland. *JAMA.* 1992;268: 2388–2394.

10. Himmelstein DU, Woolhandler S. Care denied: US residents who are unable to obtain needed medical services. *Am J Public Health.* 1995;85:341–344.

11. Andersen RM. Revisiting the behavioral model and access to medical care: does it matter? *J Health Soc Behav.* 1995;36:1–10.

12. Gelberg L, Andersen RM, Leake BD. The Behavioral Model for Vulnerable Populations: application to medical care use and outcomes for homeless people. *Health Serv Res.* 2000;34:1273–1302.

13. Blumenthal D, Mort E, Edwards J. The efficacy of primary care for vulnerable population groups. *Health Serv Res.* 1995;30(1 pt 2):253–273.

14. Brown ER. *The State of Health Insurance in California: Findings From the 2001 California Health Interview Survey.* Los Angeles, Calif: UCLA Center for Health Services Research and Policy; 2002.

15. Diamant AL, Hays R, Morales L, et al. Los Angeles County Department of Health Services/UCLA 1999 Patient Assessment Survey. Los Angeles, Calif: University of California, Los Angeles; 1999.

16. Hays RD, Shaul JA, Williams VS, et al. Psychometric properties of the CAHPS 1.0 survey measures. Consumer Assessment of Health Plans Study. *Med Care.* 1999;37(suppl 3):MS22–MS31.

17. Cunningham WE, Hays RD, Williams KW, Beck KC, Dixon WJ, Shapiro MF. Access to medical care and health-related quality of life for low-income persons with symptomatic human immunodeficiency virus. *Med Care.* 1995;33:739–754.

18. Gallagher TC, Andersen RM, Koegel P, Gelberg L. Determinants of regular source of care among homeless adults in Los Angeles. *Med Care.* 1997;35: 814–830.

19. Gelberg L, Gallagher TC, Andersen RM, Koegel P. Competing priorities as a barrier to medical care among homeless adults in Los Angeles. *Am J Public Health.* 1997;87:217–220.

20. Brown JA, Nederend SE, Hays RD, Short PF, Farley DO. Special issues in assessing care of Medicaid recipients. *Med Care.* 1999;37(suppl 3):MS79–MS88.

21. Stewart AL, Hays RD, Ware JE Jr. The MOS short-form general health survey. Reliability and validity in a patient population. *Med Care.* 1988;26: 724–735.

22. Rost K, Burnam MA, Smith GR. Development of screeners for depressive disorders and substance disorder history. *Med Care.* 1993;31:189–200.

23. *SAS, Version 8* [computer program]. Cary, NC: SAS Institute Inc; 1999.

24. *Stata Statistical Software: Release 6.0* [computer program]. College Station, Tex: Stata Corp; 1999.

25. Weissman JS, Epstein AM. The insurance gap: does it make a difference? *Annu Rev Public Health.* 1993;14:243–270.

26. Haas JS, Udvarhelyi IS, Morris CN, Epstein AM. The effect of providing health coverage to poor uninsured pregnant women in Massachusetts. *JAMA.* 1993; 269:87–91.

27. Freeman HE, Aiken LH, Blendon RJ, Corey CR. Uninsured working-age adults: characteristics and consequences. *Health Serv Res.* 1990;24:811–823.

28. Freeman HE, Corey CR. Insurance status and access to health services among poor persons. *Health Serv Res.* 1993;28:531–541.

29. Hayward RA, Shapiro MF, Freeman HE, Corey CR. Inequities in health services among insured Americans. Do working-age adults have less access to medical care than the elderly? *N Engl J Med.* 1988;318: 1507–1512.

30. Gany F, Thiel de Bocanegra H. Overcoming barriers to improving the health of immigrant women. *J Am Med Womens Assoc.* 1996;51:155–160.

31. Salganicoff A. Medicaid and managed care: implications for low-income women. *J Am Med Womens Assoc.* 1997;52:78–80.

32. Salganicoff A, Wynn R. Access to care for low-income women: the impact of Medicaid. *J Health Care Poor Underserved.* 1999;10:453–467.

33. Bierman AS, Clancy CM. Making capitated Medicare work for women: policy and research challenges. *Womens Health Issues.* 2000;10(2):59–69.

34. Harrison MJ, Neufeld A. Women's experiences of barriers to support while caregiving. *Health Care Women Int.* 1997;18:591–602.

35. Shapiro MF, Hayward RA, Freeman HE, Sudman S, Corey CR. Out-of-pocket payments and use of care for serious and minor symptoms. Results of a national survey. *Arch Intern Med.* 1989;149:1645–1648.